

# NORTH GLENGARRY NORD

*Ontario's Celtic Heartland  
Le centre celtique de l'Ontario*

## TOWNSHIP OF NORTH GLENGARRY ASSET MANAGEMENT PLAN APPROVED JUNE 27, 2022



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## **EXECUTIVE SUMMARY**

The purpose of this asset management plan is to ensure long term financial sustainability by providing essential services that meet approved standards at minimum cost.

The Province implemented the Asset Management Planning for Municipal Infrastructure Regulation, O.Reg 588/17 as amended by O. Reg. 193/21, effective January 1, 2018. The goal of this regulation is to improve the way municipalities plan for their infrastructure as the existing infrastructure is degrading faster than it is being repaired or replaced, putting services at risk.

The Township of North Glengarry (the "Township") has taken a pro-active approach in preparing a detailed Asset Management Plan, "AMP". As the Township's municipal assets continue to age, it becomes increasingly important to go through a formal process determining how a group of assets is to be managed over a period of time to help ensure safety standards, regulations and expected levels of service continue to be met given the Township's financing capabilities.

The Township's AMP is a strategic document stating the characteristics and condition of infrastructure assets, levels of service expected from them, planned actions to ensure the assets are providing the expected level of service and financing strategies to implement the planned actions. The overall intent of the AMP is to help the Township ensure investments are made at the right time, future repair and rehabilitation costs are minimized, and municipal assets are being appropriately maintained.

The AMP of the Township of North Glengarry addresses some of the capital deficiencies that the Township is currently facing but it does not address all of these deficiencies. The AMP does create funding shortfalls, and it does highlight the need for the Township to consider all financing strategies, including long term debt, transfers from reserves, granting opportunities and tax rate increases even if these strategies may be unpopular amongst ratepayers. The Township may have to consider delaying capital betterments or replacements based on the availability of funding.

## **INTRODUCTION**

The Province of Ontario's Ministry of Infrastructure emphasizes that a municipality's infrastructure investment is vital to building a strong economy and community. Public infrastructure including bridges and culverts, facilities, fleet, land, land Improvements, machinery and equipment, roads, water, and wastewater systems, are central to a township's prosperity and quality of life. Without these core assets, the viability of a municipality, from an economic, health, and environmental perspective, would be in jeopardy. The core idea is to target infrastructure investments to make roads safer and communities healthier to protect what matters most to people for future generations.

### **What is an Asset Management Plan?**

Asset Management is the process of determining how to best build, operate, maintain, renew, replace and dispose of infrastructure assets. An Asset Management Plan ("AMP") is developed for the management of one or more infrastructure assets within the municipality that combines multi-disciplinary management practices, including both technical and financial practices, over the lifecycle of the asset(s) to a specified level of service in the most cost-effective manner. The intent of an AMP is to maximize benefits and reduce risks, while providing a satisfactory level of service to the community in a sustainable manner.

An AMP also incorporates the existing preventative maintenance and risk management programs to preclude risk of failure. The preventative maintenance component ensures that the day-to-day wear and tear on the asset is dealt with to ensure that the asset can reach its expected lifecycle and the risk management component ensures that risk is managed through due diligence.

The Asset Management Process defines:

- What we own
- What is it worth
- What is the average age
- Where is it
- How we operate – service levels
- What is its condition - risk of failure/consequence of failure
- What we need to do – construct, maintain or replace
- How much will it cost and how will it be funded

### **Why Does the Township Want an Asset Management Plan?**

Asset Management Plans enhance both the budgeting and planning processes by modeling future capital costs for the upcoming ten years. This will aid the Township in understanding future budget pressures and assist in providing options on closing any infrastructure gaps. As well, a fully implemented plan will provide real life Township specific data on maintenance and operations costs allowing staff to generate tools to develop lifecycle costing and long-term performance measures. The plans will also give direction on proactive preventative maintenance and rehabilitation which will ultimately lower overall costs.

## **Benefits of an Asset Management Plan**

Specific benefits associated with an AMP include:

- Better decision-making regarding resource allocation during budget time
- More effective communications with ratepayers, elected officials, financial organizations and regulatory agencies
- Providing consistent levels of service to the public
- Better risk management practices to the municipality
- More effective financial planning
- Reduced lifecycle costs
- More efficient data management
- Avoids potential problems and crises
- Results in positive institutional change

## **The Essential Components of an Asset Management Plan**

In order for an AMP to fulfill the principles of asset management, the following essential components must be contained in the overall plan:

### **Asset Value**

All municipal infrastructure assets have a monetary value which has been determined by actual capital value or best estimates. This was completed through the Tangible Capital Asset processes using the Public Sector Accounting Handbook (PSAB) 3150 Guidelines.

### **Lifecycle Management**

All assets have a limited life expectancy and to some degree the rate of deterioration can be estimated. A decision made at any point in time in the lifecycle of an asset has an effect on the remaining life and may have operational implications and related costs. The lifecycle for each asset as presented in this report is based on the Township of North Glengarry's Tangible Capital Asset Policy, approved by council in February of 2019 and Methodology for PSAB 3150/

### **Sustainability**

In terms of asset management, sustainable development has been defined as "meeting the needs of the present generation without compromising the ability of the future generations to meet their own needs". This definition has been extracted from the "National Guide to Sustainable Municipal Infrastructure". The AMP needs to identify a financial plan over the long term to ensure that sufficient funds are available. These funds provide the resources required to operate, rehabilitate, dispose and ultimately replace the asset at the optimal time with the intention of achieving the lowest lifecycle cost.

## **Integration of Technical and Financial Plans**

The technical plan must minimize lifecycle costs for the infrastructure while maintaining an adequate level of service at the lowest possible level of risk. The financial plan must identify the financial investment required per year for each asset over the long term, including any larger than normal expenditures to meet the requirements of the technical plan. Ideally, the two plans should be integrated so the relationship between the level of service and the cost can be quantified. The Asset Management Strategies attached to this report integrate the financial investment level required to the level of service. The technical and financial relationship may change from time to time depending on the outcome of asset condition assessments.

## **Risk Assessment**

Risk should be managed in any decision-making process. The owner of the assets should analyze and document acceptable risk tolerance. In the Township's case, the probability of failure was taken into account while the condition of the asset was being analyzed. The condition survey leads to determining the rate of failure and the consequences of such failure. Risk factors can include financial, environmental, regulatory/legal and public health and safety.

## **Performance Measurement**

To optimize an AMP, performance of the assets and rehabilitation strategies should be monitored regularly, and adjustments should be made at the appropriate stage in the asset lifecycle to achieve an acceptable balance between cost and the performance (level of service). The Township has taken advantage of tools provided by various organizations including Ontario Good Roads Association (OGRA), Ontario Water Works Association (OWWA), and Ontario Recreation Facilities Association (ORFA) and the Township of North Glengarry's Strategic Plan.

The Township of North Glengarry adopted a 2019-2023 Strategic Plan in October of 2019 and is committed to ensuring that it will be used to guide their actions and decisions. The plan emphasizes three main areas that guide the AMP:

- Infrastructure
- Assets
- Services

The majority of the Township of North Glengarry's goals outlined in the Corporate Strategic Plan rely heavily on infrastructure. The Township has deemed the maintenance and planning for infrastructure to be critical to the survival and growth of the community as a whole and is a high priority as a result.

The AMP has a significant impact on the planning and financial budgeting process, which are dependent on each other. The AMP identifies the timing for asset renewal, asset maintenance, asset replacement, additions and/or disposals and the associated costs. This directly ties into the planning and financial budgeting by providing the knowledge of the timing and magnitude of future investments required to operate, maintain, renew and acquire assets.

While the AMP clearly outlines the timing and costs to maintain infrastructure assets at a certain level and condition, the capital and operating budgets ensure the acquisition and management of assets is linked to

council goals and strategies, community service expectations growth and demand projects, asset life-cycle management, and operating and maintenance programs. In addition, the AMP financial model will outline any funding shortfalls or additional funds required to be raised to maintain assets at desirable conditions.

### **Purpose of the Asset Management Plan**

The primary objective of an AMP is to maximize benefits, control risks, and provide a satisfactory level of service to the community in a sustainable manner. Infrastructure management ensures that the Township is capable of providing the desired level of service to support attaining our ultimate goals.

### **Township of North Glengarry Infrastructure Assets**

For the Township of North Glengarry, the infrastructure assets of particular significance include bridges and culverts, facilities, fleet, machinery and equipment, land, land improvements, roads, water and wastewater. These infrastructure assets present particular challenges where financing can be large and timing for renewal can cause significant peaks and valleys in expenditures.

### **DEVELOPMENT OF AN ASSET MANAGEMENT PLAN**

The Township produced the AMP in conjunction with studies done through consultants for bridges, culverts, roads, facility assessments and historical data. The AMP covers a ten-year period and uses the following resources:

- Municipal 10-year capital budgets
- Road Needs Study
- Township of North Glengarry's Tangible Capital Asset Policy
- Facility assessment reports
- PSAB financial detail reports
- Sanitary and Wastewater Collection Study
- OSIM Inspection Reports
- Minimum Maintenance Standards
- Strategic Asset Management Policy, and Tangible Capital Asset Policy
- Interviews with key managers and municipal department heads

## Implementation and Evaluation of Asset Management Plan

The following outlines the implementation to date and the status of areas of focus identified:

<b>Actions</b>	<b>Description</b>	<b>Current Status</b>	<b>Implementation Details</b>
Strategic Asset Management Policy	To provide commitment to the development of the asset management program and consistent asset management across the organization	Completed 2018	Approved by Council 2018
Tangible Capital Asset Policy	Ensures assets are recorded accurate, provide for amortization, used for planning and prioritization for the long term	Revised February 2019	Approved by Council 2019
Asset Management Software	Provides an inventory of all municipal assets	Completed in 2020	Ongoing revision to ensure accurate data. Used in conjunction with capital budget planning
Development Charges Update	Review of current changes to support growth	Under review	Schedule completion date by the end of 2022
Bridge and Culverts	Bridges and Culverts Study	Completed in 2021	Study to be completed every two years. Recommendations to be considered during annual capital budget planning.
Facilities	Condition, risk and evaluation assessment study	Completed in 2021	Recommendations to be considered in 2023 capital budget planning
Fleet	10 year capital plan based on condition and age	Ongoing	Reviewed and recommendations to be considered in annual capital budget planning
Machinery and Equipment	10 year capital plan based on condition and age	Ongoing	Reviewed and recommendations to be considered in annual capital budget planning
Roads	Roads Needs Study	Completed in 2021	Study to be completed every 5 years. Next study to be conducted in 2026
Water	Sustainable Financial Plan	Completed in 2020	Financial plans for a minimum of six years to ensure sustainability of providing safe water
WasteWater	Condition assessment through CCTV and studies	On going basis	Hydraulic model to be completed in 2022 to assist with refurbishment plan for pipe lines for growth
	Environmental Compliance Amendment (ECA) to upgrade the lagoon	Completed with a deadline of 2026 to complete	Upgrade lagoon by 2026 to allow for more capacity for growth



## **STATE OF LOCAL INFRASTRUCTURE**

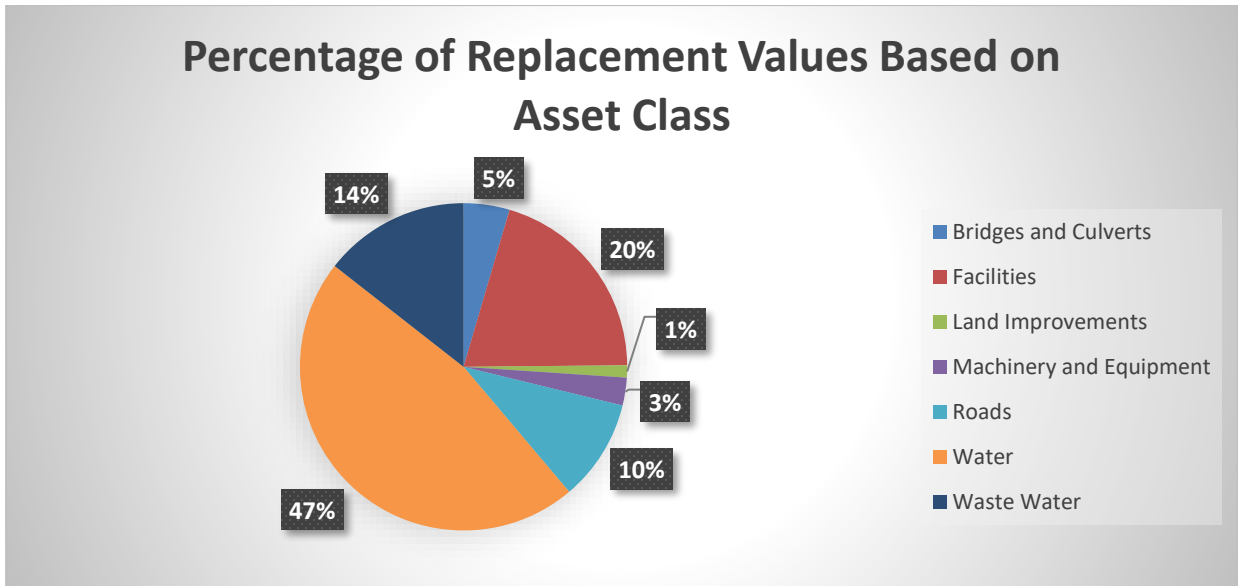
The Asset Management Plan breaks the Municipality's infrastructure into 9 categories: Bridges and Culverts, Facilities, Fleet, Land, Land Improvements, Machinery and Equipment, Roads, Water, and Wastewater. The Township of North Glengarry has a good rating in most of these categories.

Annually, as part of their operations, Departments conduct a general assessment of the condition of their assets and any changes required to the 10-year capital plan. This general assessment is used in development of priorities for the current year budget and provides information on future year financial needs. More detailed and broad condition assessments (for example, Roads Needs Study) are completed on a cyclical basis based on industry standards for the asset class. For the purpose of Asset Management planning, the asset condition information will be updated when any assessments are completed on an asset class. Year end adjustments take into consideration any disposals, betterments and acquisitions of assets to the asset registry. The chart on the following page summaries the current state of infrastructure.

**GENERAL STATE OF INFRASTRUCTURE**

						Poor
						Fair
						Good
						Very Good
Asset Type	Quantity	Replacement Cost (Fiscal Year 2021)	Replacement Cost Valuation	Average Asset Age	Asset Age as a Portion of Useful Life	Overall Asset Condition
Bridges and Culverts	60 structures	\$ 13,521,094	Structure Inventory Inspection	40 years	100%	61 = Good
Facilities	22 structures	\$ 60,523,938	Building Condition Assessment Study	26 years	65%	3 = Fair
Fleet	52 Vehicles	\$ 8,917,797	Capital budget, based on age based condition	12 years	80%	31.5 = Poor
Land	650 sq km	Unknown	Unknown	N/A	N/A	N/A
Land Improvements	Various	\$ 3,598,036	Capital budget, based on age based condition	9 years	64%	73 = Good
Machinery and Equipment	Various	\$ 8,186,137	Capital budget, based on age based condition	10 years	71%	30 = Poor
Roads	203.5 km of gravel					6.3 Good
	163.17 km hard surface					5.88 Fair
	Total Roads	\$ 29,883,760	Roads Needs Assessment Study	31 years	78%	
Water	64 km	\$ 139,253,565	Capital budget, based on age based condition	40	20%	89.01 = Very good
Wastewater	38 km	\$ 43,012,000	Capital budget, based on age based condition	40	72%	72 = Good

## Percentage of Replacement Values Based on Asset Class



There are four categories with a fair or poor rating which should be the focus of the Asset Management Plan. These categories are facilities, fleet, hard surface roads, and machinery and equipment.

Although wastewater infrastructure is rated as good, the Township currently is having a hydraulic model completed for the wastewater system to determine the ability of the system to grow with new development. This also includes the need of upgrades to the lagoon with a tentative completion date of 2026.

The deficiency in the Bridges and Culverts infrastructure as noted in the 2013 OSIM inspection report as related to guide rail and barrier systems was the focus of the Township in the last 8 years and now the condition of these assets has improved to “good”.

The 2021 Road Needs Study conducted for the Township of North Glengarry by McIntosh Perry indicated there was a deficiency in roads infrastructure which is expected to grow over the next five years. The study shows three separate models: one for the 10-year capital plan, an increase to the maintenance plan and then a further upgrade to the optimum plan. The AMP currently reflect this plan to bring the Township’s roads to the optimal grade they should be.

Most of the facilities in the Township are past their life cycle and need significant work immediately to bring their conditions up.

Fleet and machinery and equipment are also fair. Most of the fleet is past its lifecycle and repairs and maintenance costs are escalating. Equipment is also being used past its lifecycle. Based on limited budgets, fleet and equipment replacement is being pushed out annually.

Because of the continual push of replacements or betterments, there is a significant backlog in what is required in order to have the optimal condition of infrastructure assets which is noted in the financial section of this document.

All dollar amounts noted in the plan reflect 2021 figures, but replacement figures will be significantly higher due to inflation and the replacement year of the asset. Current budgets fall short of what is required. A two percent (2%) inflationary factor, compounded each year, has been included in the plan.

## **DESIRED LEVELS OF SERVICE**

### **Level of Service**

Levels of Service within the Township of North Glengarry have been adopted through a number of documents, developed in the industry and internally, focusing primarily on technical requirements that meet generally expected levels of operation and safety:

- Community Requests
- Benchmarking Reports
- Provincial Minimum Maintenance Standards for infrastructure assets, including roads, bridges, culverts, buildings, etc.
- Corporate Strategic Plan
- Municipal Water Supply and Distribution Financial Plan
- Ontario Building Code
- Provincial Fire Code
- Provincial Drinking Water Guidelines

Levels of Service are determined by five major factors: an asset inventory, alignment with the strategic plan, risk tolerance, financial considerations and consultation. There is further effort required to address and formally define levels of service from a customer perspective possibly through community surveys and continued consultation with community groups.

Through the development of strategic plans, in alignment with the United Counties of Stormont, Dundas & Glengarry's and the Township's Official Plan and the Corporate Strategic Plan, the Township is beginning to re-orientate service delivery, which is driven by service level expectations that incorporates climate change, growth, regulatory changes (i.e. Accessibility, Fire and Building Code regulations), cost and availability of contracted services and global economic factors.

**Current Performance Relative to Desired Levels of Service**

<b>Asset Type</b>	<b>Current Performance</b>	<b>Desired Levels of Service</b>
Bridges and Culverts	Since the last Asset Management Plan was developed, there was a push for bridge and culvert rehabilitation which has maintained the bridge condition index (BCI) as an average of 71 (70 - 100 is considered good)	Continued focus on asset maintenance and replacement to keep the BCI over the 70 mark with the hopes of reaching the 80 range. Ensuring public safety to transportation assets.
Facilities	Facilities are aging and only minor maintenance is done on most assets until a major renovation is required. Fifty percent (50%) are in poor condition.	Increased maintenance and repair to move the facilities to an overall fair to good rating. One aging recreation facility is undergoing a major renovation in 2022 and some repairs planned to recreation facilities should increase the overall condition rating. Ensuring residents are using well maintained and safe facilities.
Fleet	Maintenance costs are increasing as the vehicles are tried to be maintained past their estimated useful life.	Replacement of the vehicles at scheduled end of life or based on usage. Review and replacement of assets based on needs, efficiency, technology and fuel economy with minor disruption to operations.
Land	There is an inventory of current land and parcels are being sold.	Sale of vacant land to residential /commercial developers based on the Development and Marketing Strategy. Increased taxation revenues with new development.
Land Improvements	Renewal and rehabilitation of current assets.	Expansion of improvements to land based on Development and Marketing Strategy needs, resident input and Community Group endeavors and facility requirements (i.e. expansion of skateboard park, covered ice surface, fencing, etc.). Increased accessibility, safety and security for residents.
Machinery and Equipment	Replacement/maintenance of equipment when required.	Enhance the inventory and replacement schedule for all equipment in all areas of the Township. Replacement or rehabilitation of assets with minor disruption to operations.
Roads	Renewal and rehabilitation as required based on Roads Needs Study and resident/Council input.	Renewal and rehabilitation based on the Roads Needs Study and road testing to provide optimal road conditions. Ensuring public safety on all roads.
Water	Renewal and rehabilitation as required. Major water project in 2018-2021 involved a new water tower, increased water distribution system, upgrades to the water treatment plant.	Continued rehabilitation and renewal in order to sustain safe drinking water.
Wastewater	Renewal/rehabilitation to maintain the current system.	Hydraulic model creation to identify future growth needs of the Township and a plan for expansion of the wastewater piping system. Lagoon upgrades to meet the needs of future growth projections.

## **ASSET MANAGEMENT STRATEGY**

### **Planned Actions**

The Township will continue monitoring all activities relating to the various assets. Normal maintenance activities will continue to be performed and when this becomes cost prohibitive or there are concerns regarding safety or structural integrity, the best course of action, renewal/rehabilitation or replacement, will be considered. Typically, a replaced asset will be disposed of either as a part of the purchase or through other disposal means. Any expansion required will be conducted in alignment with the Township's Corporate Strategic Plan.

### **Procurement Methods**

The Township will ensure best practices in the industry are used while protecting the interests of the Township and vendors as per the Procurement Policy revised in 2021. This policy will be applied, as appropriate, for all asset and asset management related purchases. Departments also consider opportunities to partner with other organizations to minimize costs and disruption to residents.

### **Overview of Risks Associated with Strategy**

Understanding risks is important to the safety and functionality of the community as it relates to its infrastructure. Having assets perform at the expected level of service is important for the Township. If the assets have to shut down or are compromised, it becomes inconvenient for all.

Risk has been a primary driver of several programs including sidewalk inspections, road inspections, sign inspections, and street-lighting inspections. Assets are assigned a level of criticality based on probability of failure and consequence of failures, one (1) being low probability or consequence, and five (5) being high consequence and probability of failure.

The following chart shows the Township of North Glengarry's risk profile as of 2021. Of the eleven in the very high-risk category, four (4) are related to water works, four (4) are related to roads, one (1) is related to playgrounds, one (1) is related to a recreation facility, and one (1) pertains to the RARE plant.

Consequence	5	6 Assets 8.00 unit(s) \$137,200,000.00	0 Assets - \$0.00	0 Assets - \$0.00	0 Assets - \$0.00	2 Assets 2.00 unit(s) \$31,940,765.00
	4	1 Asset 1.00 unit(s) \$786,688.00	1 Asset 1.00 unit(s) \$671,126.00	0 Assets - \$0.00	0 Assets - \$0.00	1 Asset 1.00 unit(s) \$934,254.00
	3	6 Assets 6.00 unit(s) \$3,987,422.00	8 Assets 8.00 unit(s) \$4,244,715.00	2 Assets 2.00 unit(s) \$1,233,068.00	1 Asset 1.00 unit(s) \$782,532.00	8 Assets 8.00 unit(s) \$6,633,058.00
	2	4 Assets 4.00 unit(s) \$619,446.00	1 Asset 1.00 unit(s) \$275,939.00	6 Assets 7.00 unit(s) \$2,381,552.00	6 Assets 6.00 unit(s) \$1,133,826.00	34 Assets 35.00 unit(s) \$16,562,287.00
	1	20 Assets 20.00 unit(s) \$788,968.00	140 Assets 21,649.00 unit(s), sq ft \$6,147,245.00	348 Assets 504,898.00 unit(s), sq ft, m2 \$14,960,867.75	342 Assets 471,014.00 unit(s), sq ft, m2 \$13,756,511.50	1,831 Assets 850,905.91 unit(s), sq ft, feet, m2, km \$68,936,629.79
		1	2	3	4	5
		Probability				

Colour	Risk Rating
Light Green	Very low
Light Blue	Low
Light Yellow	Fair
Light Orange	High
Light Red	Very High



## **FINANCING STRATEGY**

A financial plan is critical to an Asset Management Plan (AMP), as it demonstrates that an effort was made to integrate Asset Management Planning with financial planning and budgeting. It is important to recognize that based upon the AMP, the amount of funds available through the current ten-year capital budget process may not be sufficient to sustain the current level of service let alone reach desired levels of service. Staff will continue to collectively work together to accommodate the financial and technical requirements of this plan, including taking advantage of any grant funding programs that may be available today or in the future. All financing strategies will be considered to support a sustainable operating and capital program.

The AMP addresses the infrastructure deficiencies but the size and timing of the projects necessary to address these deficiencies require borrowing, transfers from reserves, or increased taxes. The AMP indicates that the Township will not be able to meet the financial requirements of the plan. The Township will have to consider financing strategies that reduce or minimize debt accumulation while maintaining healthy levels of reserve funds.

Council ultimately will need to balance the need to invest in local infrastructure based on priorities identified throughout the AMP while considering the short- and long-term financial implications to the Township. In addition to the projected reliance on debt financing discussed above, Council will need to aggressively pursue opportunities to obtain additional funding from other levels of government as Townships throughout the Province compete for limited grant dollars.

While both debt and grant financing present valid opportunities to minimize the burden on ratepayers due to the current low interest rate and new infrastructure programs, Council may still need to consider raising municipal taxes, user fees and service charges to address shortfalls currently not dealt with by the AMP. Another factor to consider is the increased cost of materials, contracted services, fuel and the overall increase in cost of living currently occurring in 2022 which will have an impact on the overall budget and cost of repairing and replacing infrastructure. The four-year freeze that the Municipal Property Tax Assessment Corporation (MPAC) has put on assessment values has reduced the amount of addition tax dollars available to fund the 10-year capital plan as well.

The revenue plan is outlined below along with the current 10-year asset management plan to provide safe and reliable municipal services to residents. It should be noted, that due to lack of funding in the past, some betterments or replacements have been pushed past their useful life resulting in a current backlog of approximately \$60 million.

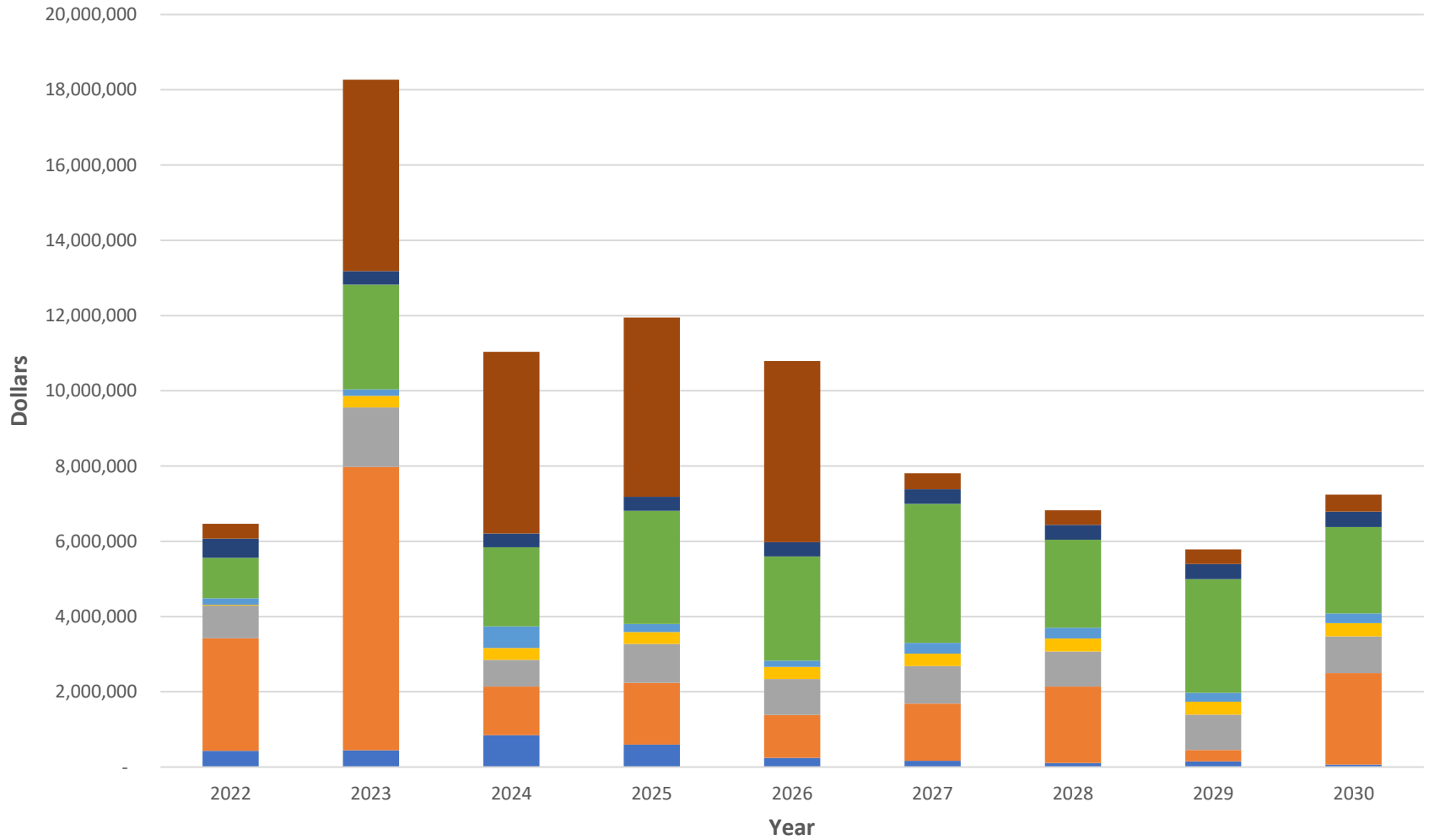
**FINANCIAL STRATEGY 2022-2031**

REVENUE PLAN 2022-2031											
	YEAR	TAX REVENUES	PENALTIES & INTEREST	A/R grants yr end adj	GRANTS	USER FEES	FINANCING CAPITAL	OTHER REVENUE	FROM RESERVES	SALE OF EQUIPMENT	TOTAL
ACTUAL	2019	5,897,608	382,883	5,500,746	8,172,386	5,664,141	-	95,670	513,602	5,183	\$ 26,232,219
	2020	6,200,100	265,333	1,686,005	5,596,564	4,649,248	-	158,056	323,870	118,278	\$ 18,997,454
	2021	6,349,539	320,000		5,438,020	5,577,089	275,000	122,959	1,089,094	27,000	\$ 19,198,701
BUDGET	2022	6,468,736	313,000		5,083,992	5,667,247	1,005,000	157,806	1,727,000	20,000	\$ 20,442,781
F O R E C A S T S	2023	6,599,111	308,330		2,964,000	5,780,592	2,008,750	152,293	102,000	30,000	\$ 17,945,076
	2024	6,731,073	308,663		2,964,000	5,896,204		155,289	175,000	30,000	\$ 16,260,229
	2025	6,865,674	309,000		2,964,000	6,014,128		158,345	82,000	30,000	\$ 16,423,147
	2026	7,002,968	309,340		2,964,000	6,134,410		163,462	-	30,000	\$ 16,604,180
	2027	7,143,007	309,683		2,964,000	6,257,099		164,641	-	30,000	\$ 16,868,430
	2028	7,285,847	310,030		3,064,000	6,382,241		167,884	-	30,000	\$ 17,240,002
	2029	7,431,544	310,380		3,064,000	6,509,885		171,191	-	30,000	\$ 17,517,000
	2030	7,580,155	310,734		3,064,000	6,640,083		176,565	-	30,000	\$ 17,801,537
	2031	7,731,738	311,092		3,064,000	6,772,885		178,006	-	30,000	\$ 18,087,721

NOTE: 2021 is representing budgeted figures at this time because Council audited financial statements have not yet been approved at this time.

<b>10 YEAR ASSET MANAGEMENT PLAN</b>											
<b>TOWNSHIP OF NORTH GLENGARRY SUMMARY</b>											
		<b>Budget</b>									
<b>AREA</b>	<b>Current Backlog</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
Bridges and Culverts	8,033,644	430,000	443,000	847,000	599,500	241,350	164,000	107,250	150,000	69,000	339,011
Facilities	16,136,966	2,994,375	7,533,372	1,292,777	1,640,774	1,145,574	1,522,574	2,030,874	304,774	2,426,874	163,524
Fleet	1,340,000	868,000	1,580,000	710,000	1,030,000	950,000	995,000	935,000	935,000	975,000	1,105,000
Land Improvements	2,718,536	20,000	309,000	315,180	321,484	327,913	334,472	341,161	347,984	354,944	362,043
Machinery and Equipment	400,000	173,000	175,200	573,000	210,000	161,000	285,000	292,500	236,000	258,000	162,500
Roads	12,615,215	1,074,500	2,779,700	2,104,300	3,008,000	2,770,600	3,696,000	2,336,400	3,018,500	2,295,600	2,180,750
Water	1,486,725	511,500	358,950	366,168	373,531	381,041	388,702	396,515	404,485	412,615	420,906
Wastewater	17,000,000	393,558	5,090,000	4,825,000	4,765,000	4,815,000	425,000	382,000	389,140	446,423	453,851
<b>Total Before Inflation</b>	<b>59,731,086</b>	6,464,933	18,269,222	11,033,425	11,948,289	10,792,478	7,810,748	6,821,700	5,785,883	7,238,456	5,187,585
<b>Inflation</b>		1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20
<b>Total with Inflation</b>		6,464,933	18,634,606	11,479,175	12,679,619	11,682,126	8,623,696	7,682,342	6,646,161	8,481,004	6,199,644
<b>Operating Budget Requirments</b>		12,951,966	13,211,005	13,475,225	13,744,730	14,019,625	14,300,017	14,586,017	14,877,738	15,175,292	15,478,798
<b>TOTAL EXPENSES</b>		19,416,899	31,845,611	24,954,401	26,424,349	25,701,750	22,923,713	22,268,360	21,523,899	23,656,297	21,678,443
<b>TOTAL REVENUES (Based on current funding)</b>		20,508,899	20,187,990	18,607,001	18,875,854	19,162,942	19,539,407	19,923,397	20,315,065	20,714,563	21,122,047
<b>Surplus/(Deficit)</b>		<b>1,092,000</b>	<b>(11,657,621)</b>	<b>(6,347,400)</b>	<b>(7,548,495)</b>	<b>(6,538,808)</b>	<b>(3,384,306)</b>	<b>(2,344,963)</b>	<b>(1,208,834)</b>	<b>(2,941,734)</b>	<b>(556,396)</b>

### Annual Capital Requirements (10 year projection)



## **FINANCIAL STRATEGY KEY ASSUMPTIONS**

### **Revenue and Expenses**

1. Property tax assessments have been frozen from 2020-2024 by the Municipal Property Assessment Corporation ("MPAC"). They are not sure what the plan is for 2024 onward so it is impossible to predict any property assessment increases which could result in additional tax revenues.
2. Tax revenues have been assumed to increase by 2% annually either by tentative changes in assessment or tax rate increases.
3. Fees and service charges will increase each year at the rate of inflation (2% used in the model)
4. Federal and provincial grants have been assumed to be static.
5. Investment income has been increased by 1% each year with minimal impact.
6. Other revenue has been increased by 2% each year to for inflationary increases in agreements for items such as rental of buildings.
7. Operating expenditures including salaries and wages have been increased by 2% as an inflationary estimate.
9. Annual operating surpluses will be applied to previous year deficit positions until they are eliminated.
10. Annual surpluses after deficit elimination will be transferred to working reserves at fiscal year-end.

### **Capital Expenditures and Long-Term Debt**

11. Capital expenditures will be financed by either operations, long term debt, transfers from reserves or grant opportunities based on the overall capital budget and financing required.
12. Water and wastewater capital expenditures would be financed by user fees, transfer from reserves, long term debt or grant opportunities.
13. The terms of long-term debt will be amortized over a period of 10-30 years based on the capital needs.
14. Repayments of long-term debt will commence the following year after completion of capital Projects or as required for cash flow.
15. Capital road and bridge expenditures are estimates from the Bridges/Culverts and Roads Needs studies conducted in 2021. Facility assessments were also based on estimate from an external study.
16. Capital road and bridge projects will be financed annually by the federal gas tax funds, operational dollars, reserves or other grant opportunities.
17. Any unused federal gas tax funds at year end will be placed in the Gas Tax Reserve fund and used in future years to offset capital expenditures.
18. Specific capital expenditures during 2022-2031 are based on estimates from discussions with administration and departmental managers based on 10-year capital requirements or Asset Management software rehabilitation/replacement schedules or annual requirements as they appear.
20. A lagoon project is needed for a total of \$18.7M spanning over 2023-2026 for growth and in accordance to the timing of the Environment Compliance Amendment. This will be difficult to fund as the wastewater budget is user based and not part of the overall tax levy.
20. All capital expenditures will be capitalized as tangible capital expenditures at year end.

### **Cash Flow Summary**

21. All operating surpluses will be allocated to Operating Reserve funds to be utilized in future year funding requirements.
22. Taxes are billed and collected on an annual basis.

23. Aggressive tax collection is underway to reduce past year's arrears including tax sales for delinquent accounts that are uncollectable.
24. Water and wastewater user fees are collected on an annual basis.
25. All grants will be received in the same year as earned.
26. There will be no change in accounts payable.
27. There will be no change in accrued interest and future employment benefits payable.
28. There will be no additional tile drain long-term debt.
29. There will be no change in inventory or prepaid expenses.
30. The Asset Management Plan will be updated every 5 years. However, the data in the Asset Management software is current and updated as changes occur.
31. The AMP does not indicated any transfers from reserves as these fluctuate annually and are fairly low at present.
32. The AMP does not indicate any grant funding as these are project specific based on the stream of funding and are subject to change annually. Major capital will be carried out only if totally funded.

### **Funding Shortfalls**

Funding shortfalls are noted throughout the 10-year asset management plan. Service levels will need to be revised and asset betterment/replacement may need to be deferred due to lack of funding. Grant opportunities and other funding opportunities will need to be provided in order to lessen the burden on the tax base, keep within annual debt repayment limits and ensure safe and reliable service levels to residents. Although not approved at this time, these and other financing strategies will be considered to support a sustainable operating and capital program.

**APPENDIX- ASSET MANAGEMENT STRATEGIES  
and  
10 YEAR DETAILED PLANS**

<b>BRIDGES AND CULVERTS</b>	
<b>Inventory (as of December 31, 2021)</b>	There are a total of 33 bridges and 27 culverts in the Township. Half of these inventories are inspected in accordance with the Ontario Structural Inspection Manual (OSIM) every two years.
<b>Anticipated Asset Life Cycle</b>	The useful life of a bridge or culvert is 40 years. Construction practices, materials, traffic volumes, loads, climate and salt exposure can vary the assumed life cycle.
<b>Integrated</b>	Rehabilitation of bridges and culverts may be integrated with road resurfacing or widening projects.
<b>Rehabilitation or Replacement Criteria</b>	Each bridge and culvert is visually inspected in accordance to OSIM on a biannual basis. Detailed bridge construction surveys are completed as required with components evaluated and tested.
<b>Rehabilitation or Replacement Strategy</b>	Bridge/culvert rehabilitation or replacement is based on the age, needs, assumed life spans and functional needs.
<b>Life Cycle Consequences</b>	If bridge and culvert life cycles are increased, level of service is lowered and safety can be compromised.
<b>Integrated Asset Priorities</b>	Integration projects occur internally and externally but in general is not driven by the replacement of road infrastructure.
<b>Corporate/Consulting Source</b>	Township of North Glengarry 2020-2021 Bridge Management Study (HP Engineering Inc. April 2021) Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan CityWide Asset Management software
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$3,390,111





Bridges and Culverts												
10 Year Asset Management Plan												
Structure Number	Name	Description	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	Bishop Street Bridge		80,000									
2	Concession 8 Bridge	Concrete repairs on deck, abutment walls, exterior soffit								36,000		
3	Athol Road Bridge											
4	Concession 21 Bridge	Install approach barrier and end treatments, install bridge barrier and connections, concrete repairs on girder and soffit, embankment work					114,850					
5	Scotch River Bridge											
6	Laggen Road Culvert											
7	Laggen Road Arch Culvert											
8	Laggen Road Bridge											
9	Laggen Road Bridge	Concrete repair on abutment walls									5,000	
10	Kenyon Concession Road 4 Culvert											
11	Concession 8 Bridge	Concrete repairs, replace deck barrier and approach guiderail		107,000								
12	Concession 8 Culvert	Install code compliant deck barrier and approach barrier, concrete repairs on deck top and soffit, traffic control					126,500					
13	Skye Road Culvert											
13-B	Skye Road Culvert											
13-C	Skye Road Culvert											
14	Auld McMillan Road Bridge											
15	Kenyon Concession 4 Bridge	Install approach barrier and end treatments, railing system, deck top surface repair						164,000				
16	Concession Road 4 Bridge	Install approach barrier and end treatments, install code compliant deck barrier, concrete repairs on deck top and soffit, embankment work, traffic control, environmental stud				227,500						
17	Fraser Road Bridge											
18	Lochnivar Road Culvert											
19	Lochinvar Road Bridge	Replace end treatments and deck connection, concrete repairs on deck top and end dams								53,000		
20	Lochinvar Road Bridge											
21	Lochinvar Road Bridge											
22	Lochinvar Road Bridge											
23	Seventeenth Bridge	Structure replacement, traffic control, environmental study			847,000							
24	Creek Road Culvert											
25	Macleod Road Culvert											
26	Creek Road Bridge	Replace structure										

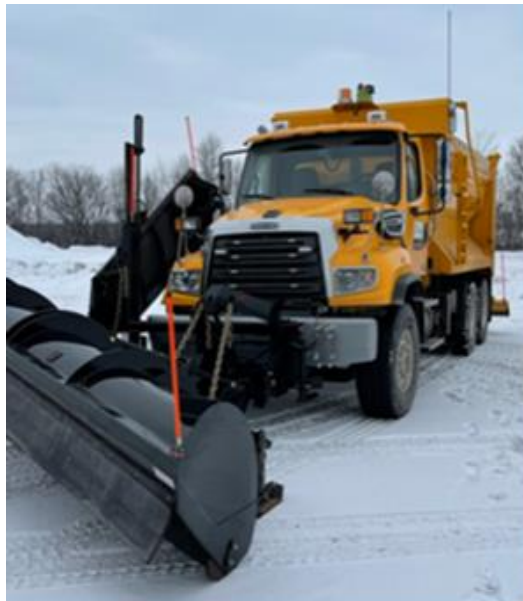
Structure Number	Name	Description	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
27	Macks Corners Road Bridge	Replace end treatments and deck connecton, install code compliant deck barrier, concrete repairs on abutment walls, girders, soffit, pier shaft, erosion congtrol on embankments, concrete repairs on deck top		213,000								
28	Ranger Bridge											
29	Binette Road Culvert											
30	Blind Road Bridge	Replace end treatments, concrete repairs on beams and deck top									44,000	
32	Blind Road Bridge											
33	Brodie Road Bridge											
34	Brodie Road Bridge											
36	Wylie Road Bridge											
38	Green Road Culvert											
39	Hope Ouimet Road Bridge											
40	Hope Ouimet Road Bridge											
41	Mcintee Road Bridge											
42	Power Dam Road Bridge											
43	McCormick Road Culvert											
44	McPhee Road Bridge	Install code compliant ent treatments, embankment work, detours								61,000		
45	Bourcier Bridge											
46	Concession 16 Road Culvert											
47	Lochinvar Road Bridge	Install approach barrier and end treatments, install code compliant deck barrier, concrete repairs on abutment walls							107,250			
49	Irvine Road Bridge											
50	Glen Sandfield Road Culvert											
51	Glen Sandfield Road Culvert											
52	Aberdeen Road Culvert	Replace structure				372,000						
53	Old Military Road Culvert											
54	Blind Road Bridge											
56	Power Dam Road Culvert	Replace end treatment, concrete repairs on abutment walls and deck soffit									20,000	
57	Centre Street Bridge	Install code compliant deck barrier, concrete repairs on abutment walls, deck top , soffit interior, sidewalk. Repave approach wearing surface and deck wearing surface		123,000								
58	Sanfield Avenue Pedestrian Bridge											
59	Dominion Street South Bridge	Replace structure	350,000									
62	Lochiel Street West culvert											
63	Kenyon Concession Road 6 Bridge											
64	Old Military Road Culvert											
65	Kenyon Concession Road 7 Culvert											
		<b>TOTAL COST BY YEAR</b>	<b>430,000</b>	<b>443,000</b>	<b>847,000</b>	<b>599,500</b>	<b>241,350</b>	<b>164,000</b>	<b>107,250</b>	<b>150,000</b>	<b>69,000</b>	<b>339,011</b>

<b>FACILITIES</b>	
<b>Inventory (as of December 31, 2021)</b>	The Township had 22 facilities and buildings assessed. Some older ones, far beyond their lifecycle were not considered and should be demolished.
<b>Anticipated Asset Life Cycle</b>	Facilities have a useful life of 40 years.
<b>Integrated</b>	Building condition assessments were conducted and a summary provided. Projects are generally lumped together per asset to take advantage of economies of scale. Consideration is given to minimize disruption to operations to an asset over time.
<b>Rehabilitation or Replacement Criteria</b>	A building condition assessment (BCA) was conducted and a summary created based on age, condition, useful life and in accordance with the American Society for Testing and Materials (ASTM) Standard E2018 "Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process". Buildings were ranked from very poor to very good and a rehabilitation schedule created.
<b>Rehabilitation or Replacement Strategy</b>	The physical condition ranking helps identify the action to be taken (rehabilitation, maintenance, replacement etc.) and assists with determining if the facility is achieving its expected level of service. Replacement/rehabilitation is highly linked to grant/funding availability.
<b>Life Cycle Consequences</b>	Consequences are increased deterioration of facilities, health and safety concerns, inefficient operations, higher operating costs, failure of the facility.
<b>Integrated Asset Priorities</b>	Rehabilitation/replacement is based on condition, where it is in its lifecycle, and the availability of resources to correct or replace it with minimal disruption of program/service delivery.
<b>Corporate/Consulting Source</b>	Township of North Glengarry Building Assessment Reports (December 2021) Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan CityWide Asset Management software
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$21,055,492



<b>Facilities</b>										
<b>10 Year Asset Management Plan</b>										
<b>Facility Name</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
Apple Hill Fire Station		146,163	3,570	3,570	3,570	3,570	3,570	3,570	3,570	3,570
Apple Hill Recreation Centre	15,875	299,884	-	-	-	-	-	-	-	-
Dalkeith Library		156,650	15,000	-	-	500	-	-	-	-
Dalkeith Recreation Centre	15,875	180,670	42,003	-	-	-	-	-	-	-
Dome		121,129	125,000	-	-	-	-	-	-	-
Dunvegan Recreation Centre	15,875	264,485	21,785	1,785	1,785	1,785	1,785	1,785	1,785	1,785
Filtration Plant Gernish		445,000	-	-	-	-	-	-	-	-
Fire Hall and Ambulance Bay	67,000	204,795	-	-	-	-	-	-	-	-
Glen Robertson Recreation Hall	15,875	233,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Glengarry Sports Palace	2,278,875	621,859	-	-	-	-	-	-	-	-
Legion and Senior Support Centre		111,500	-	-	-	-	-	-	-	-
Maxville Fire Hall & Public Library		342,025	-	-	-	-	-	-	-	-
Maxville Sports Complex	500,000	2,404,539	139,159	139,159	139,159	139,159	139,159	139,159	139,159	139,159
Public Works Garage Kenyon Conc		104,973	7,225	7,225	7,225	7,225	7,225	7,225	7,225	7,225
Public Works Garage Lochiel		447,750	775,000	546,700	864,300	548,450	1,266,000	56,750	1,376,000	5,000
Public Works Garage Tobin St.		393,500	15,000	-	-	-	-	-	-	-
Public Works Office Kenyon St		126,355	1,785	1,785	1,785	1,785	1,785	1,785	1,785	1,785
RARE	85,000	139,275	-	-	-	500	-	-	-	-
Salt Shed Kenyon		93,750	-	-	-	-	-	-	-	-
Salt Shed Lochiel		215,000	-	-	-	-	-	-	-	-
Sandfield Centre		387,650	142,250	935,550	122,750	814,600	606,350	89,500	892,350	-
Township Office 90 Main		93,420	-	-	-	-	-	-	-	-
<b>TOTAL COST BY YEAR</b>	<b>2,994,375</b>	<b>7,533,372</b>	<b>1,292,777</b>	<b>1,640,774</b>	<b>1,145,574</b>	<b>1,522,574</b>	<b>2,030,874</b>	<b>304,774</b>	<b>2,426,874</b>	<b>163,524</b>

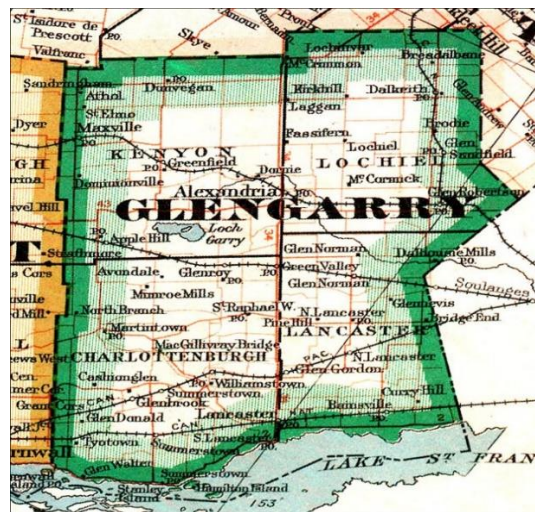
<b>FLEET</b>	
<b>Inventory (as of December 31, 2021)</b>	The Township has approximately 68 vehicles and related pieces.
<b>Anticipated Asset Life Cycle</b>	The useful life of a vehicle depends on the service area, type, size and cost. The range is between 10-25 years.
<b>Integrated</b>	Equipment is rehabilitated/replaced based on technical advances, financial plans, environmental regulations, operational changes and service increases or decreased.
<b>Rehabilitation or Replacement Criteria</b>	Rehabilitation/replacement is based on lifecycle analysis considering depreciation, fuel, repair costs, downtime, insurance and usage. Based on this optimal replacement years are determined for vehicles.
<b>Rehabilitation or Replacement Strategy</b>	Usage and repair costs are reviewed to warrant replacement. Leasing, seasonal rental opportunities, refurbishing strategies, and possibly contracting services to a third party are all considered. Review of the "best fit" depending on the services that need to be provided are also considered.
<b>Life Cycle Consequences</b>	As cost per kilometer and downtime increase, work schedules need to be lengthened. This increases labour costs as well, resulting in a loss of efficient production.
<b>Integrated Asset Priorities</b>	Replacement is based on actual condition, where the asset is in its lifecycle, and availability of resources to complete the asset with minimal disruption to program/service delivery.
<b>Corporate/Consulting Source</b>	Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan CityWide Asset Management software
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$10,083,000



Fleet											
10 Year Asset Management Plan											
Fleet Unit	Area	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1/2 ton truck #64 (2011)	Bylaw	50,000									
1/2 Ton Truck - Unit #92	CBO			50,000							
Fire - Pick up - Station 3 - Brush fire truck	Fire			70,000							
Fire - Pick up/SUV (2020)	Fire						65,000				
Fire - Pumper - Station 1 - Alexandria	Fire										
Fire - Pumper/Tanker - Station 2 - Apple Hill (2011)	Fire		750,000								750,000
Fire - Pumper/Tanker - Station 3 - Maxville (1996)	Fire	-				700,000					
Fire - Rescue Vehicle - Station 2 - Apple Hill (2007)	Fire							400,000			
Fire - Rescue Vehicle - Station 3 - Maxville (2006)	Fire				400,000						
RARE - 1/2 ton truck Unit #63 (2011)	RARE			50,000							
1/2 ton Pick up 1500 with 6 ft bed (2017) Unit 96	Recreation						50,000				
1/2 ton Pick up 1500 with 6 ft bed (2011) Unit 59	Recreation				50,000						
3/4 ton Pick up truck 2500, with 8 ft bed (2018) Unit 101	Recreation							60,000			
Tandem Truck unit #72 (1999)	Roads	340,000									
Backhoe - Unit # 54 (2010), Roads Dept.	Roads									175,000	
1/2 Ton Truck - Unit 50 (2009), Roads Dept.	Roads										
1/2 Ton Truck - Unit 88 (2008)	Roads					50,000					
Tandem Truck - Unit # 14 (2001)	Roads										275,000
Tandem Truck - Unit #22 (2004)	Roads		380,000								
Tandem Truck - Unit # 35 (2008)	Roads	340,000									
Tandem Truck - Unit # 36 (2008)	Roads			380,000							
1/2 Ton Truck - Unit # 75 (2014)	Roads			50,000							
1/2 Ton Truck - Unit # 60 (2011)	Roads			50,000							
3/4 Ton Truck - Unit # 61 (2011)	Roads	60,000									
3/4 Ton Truck - Unit # 62 (2011)	Roads			60,000							
Tandem Truck - Unit # 37 (2008)	Roads				380,000						
Loader - Unit # 76 (2014)	Roads				200,000						
Sidewalk Vehicle - Unit # 66 (2011)	Roads									250,000	
Tandem Truck - Unit # 70 (1999)	Roads								380,000		
Tandem Truck - Unit #82 (2016)	Roads						380,000				
1/2 ton pick up truck #104 (2019)	Roads								50,000		
1/2 Ton Truck - Unit # 49 (2009)	Roads		50,000								

Fleet Unit		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1/2 Ton Truck - Unit #78 (2015)	Roads					50,000					
1/2 Ton Truck - Unit #85 (2016)	Roads							50,000			
3/4 Ton Truck - Unit # 100 (2018)	Roads								75,000		
3/4 Ton Truck - Unit # 84, 4X4 (2016)	Roads					75,000					
3/4 Ton Truck - Unit # 95, 4X4 (2017)	Roads					75,000					
Excavator - Unit # 94 (2015)	Roads							250,000			
Grader - Unit # 65 (2012)	Roads		400,000								
John Deere Backhoe - Unit # 103 (2019)	Roads							175,000			
Pumper Truck - Unit # 67 (1990)	Roads	30,000									
Tandem Truck #106 (2019)	Roads								380,000		
1/2 ton pick up truck #108 (2020)	Roads									50,000	
1/2 ton pick up truck #105 (2019)	Roads								50,000		
1/2 Ton Truck - Unit 48 (2009), Water Dept.	Waterworks	48,000									
1 ton dump truck	Roads										80,000
Additional Equipment required due to growth	Roads						500,000			500,000	
<b>TOTAL COST BY YEAR</b>		<b>868,000</b>	<b>1,580,000</b>	<b>710,000</b>	<b>1,030,000</b>	<b>950,000</b>	<b>995,000</b>	<b>935,000</b>	<b>935,000</b>	<b>975,000</b>	<b>1,105,000</b>

<b>LAND AND LAND IMPROVEMENTS</b>	
<b>Inventory (as of December 31, 2021)</b>	The Township has 650 square kilometers of land located in the north eastern region of the United Counties of Stormont, Dundas and Glengarry. The Township owns vacant land for expansion or sale plus land associated with facilities or maintained for environmental purposes (storm water ponds).
<b>Anticipated Asset Life Cycle</b>	Land has an indefinite useful life and the cost of land is not amortized as it usually maintains its value over time. Land improvements include parking lots, fencing, interlock pathways, playgrounds, bleachers, tennis courts, skateboard parks and land changes that are done to the land that do not fall under another category such as facilities.
<b>Integrated</b>	Land and land improvements are integrated with roads, facilities, bridges, culverts, water and waste water.
<b>Rehabilitation or Replacement Criteria</b>	Replacement or rehabilitation is based on lifecycle analysis, visual inspections or other regulated inspections such as for playgrounds.
<b>Rehabilitation or Replacement Strategy</b>	Assets are reviewed annual and maintenance, rehabilitation, replacement or expansion is scheduled as part of the 10 year plan. The Asset Management Software is used to review when assets are scheduled for maintenance/rehabilitation based on their lifecycle, but inspections may change the timing of this.
<b>Life Cycle Consequences</b>	Land has an indefinite lifecycle. However there is a potential increase in maintenance and rehabilitation costs based on climate change, or depending on the improvements planned.
<b>Integrated Asset Priorities</b>	Land improvements rehabilitation forecasts should consider roads, bridges, culverts, water and waste water forecasts. Integration of projects can occur internally or externally.
<b>Corporate/Consulting Source</b>	Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan CityWide Asset Management software
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$3,034,180





<b>Land Improvements</b>										
<b>10 Year Asset Management Plan</b>										
<b>Description</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
CityWide annual estimate x 2% per year includes playgrounds, fences, benches, etc.	20,000	309,000	315,180	321,484	327,913	334,472	341,161	347,984	354,944	362,043
Estimated based on yearly assessment										
<b>TOTAL COST BY YEAR</b>	<b>20,000</b>	<b>309,000</b>	<b>315,180</b>	<b>321,484</b>	<b>327,913</b>	<b>334,472</b>	<b>341,161</b>	<b>347,984</b>	<b>354,944</b>	<b>362,043</b>

<b>MACHINERY AND EQUIPMENT</b>	
<b>Inventory (as of December 31, 2021)</b>	Equipment includes furniture and fixtures, generators, pumps, nozzles, hoses, air packs, specialized fire equipment, ladders, law mowers, pumps, etc. Equipment may be a fixed or movable capital asset used for operations.
<b>Anticipated Asset Life Cycle</b>	The useful life ranges from 5-20 years based on the type of equipment. This information is provided by the applicable department head based on the type of equipment.
<b>Integrated</b>	Individual assets are kept on a replacement schedule matching their useful life ranges and/or hours of use. They are replaced as to no disrupt operations.
<b>Rehabilitation or Replacement Criteria</b>	Other than the useful life of the asset, replacement may also be considered when the asset's productivity decreases or the cost of repairs to keep it in service is too great.
<b>Rehabilitation or Replacement Strategy</b>	Usage and repair costs are reviewed to warrant replacement. Leasing, seasonal rental opportunities, refurbishing strategies, technological advancements and possibly contracting services to a third party are all considered. Review of the "best fit" depending on the services that need to be provided are also considered.
<b>Life Cycle Consequences</b>	Consequences include the disruption of operations and potential increased maintenance costs. For some equipment such as defibrillators or specialized fire extrication equipment, consequences of failure could be life threatening.
<b>Integrated Asset Priorities</b>	Replacement is based on condition, the point of time in its lifecycle, and the availability of resources to complete the replacement with minimal disruption to operations.
<b>Corporate/Consulting Source</b>	Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan CityWide Asset Management software
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$2,526,200



<b>Machinery and Equipment</b>											
<b>10 Year Asset Management Plan</b>											
<b>Name</b>	<b>Area</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
ATV Electric (2012)	Recreation										
Ice Resurfacer and laser - Maxville	Recreation				143,000						
Ice Resurfacer Alexandria	Recreation	143,000									
Lawn mower (2018) Cub Cadet	Recreation										
Lawn mower (2017) Cub Cadet	Recreation				8,000						
Lawn mower (2015) Cub Cadet	Recreation						8,000			8,000	
Lawn mower (2014) Cub Cadet	Recreation								8,000		
Lawn mower (2014) Cub Cadet	Recreation								8,000		
Lawn mower (2013) Cub Cadet	Recreation							8,000			
Lawn mower (2008) Yard Machines	Recreation		8,000	8,000							
Mower trailer (2015)	Recreation				7,000						
Mower trailer (2021)	Recreation										7,000
Leaf blower (2014)	Recreation		200								
Leaf blower (2021)	Recreation										
Trimmer (2021)	Recreation										500
Trimmer (2017)	Recreation					500					
Trimmer (2017)	Recreation					500					
Trimmer (2015)	Recreation				500						
Trimmer (2015)	Recreation				500						
Trimmer (2014)	Recreation			500							
Trimmer (2014)	Recreation			500							
Trimmer (2013)	Recreation		500								
Floor scrubber (2018)	Recreation										
Floor Scrubber (2015)	Recreation									10,000	
Push Mower (2018)	Recreation							1,000			
Push Mower (2015)	Recreation				1,000						
Roller (2016)	Recreation										
Power Sweeper (2015)	Recreation		1,500					1,500			
Top dresser (2021)	Recreation										
Inverter (2017)	Recreation										
Lawn Aerator (2018)	Recreation							2,000			
Promac 48" Heavy Duty Mulcher (Razor) (2021)	Roads										
#69 Kubota Roadside Mower 7' (2012)	Roads										
Plate Tamper 1000 lb	Roads										15,000

Name		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Weed Harvester #91 (2016)	Roads									160,000	
Float (used)	Roads										
RARE - truck tires	RARE			14,000							
Tractor 35 hp with mower, blower, push blades (2008)	Roads							40,000			
Tractor #83 (2016)	Roads									60,000	
SCBA	Fire			500,000							
Bunker Gear	Fire		10,000			10,000			10,000		
Kitchen equipment (stove/fridge)	Recreation					10,000					
Computer Equipment	Administration	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Telephone System Upgrades	Administration		10,000								
#76 plow blade (2014) loader	Roads			30,000							
#100 plow Blade (2018) Pickup	Roads							10,000			
#99 snow plow (2018) grader	Roads		15,000								
#83 roadside mower (2016) tractor	Roads										
#52 burner unit (2008) trailer for coldpatch	Roads							10,000			
#95 plow and sander (2015) pickup	Roads				10,000						
#67 water flushing equipment (1990) pumper truck	Roads		30,000								
#54 loader with forks (2010) backhoe	Roads		5,000								
#65 plow and wing (2012) grader	Roads						15,000				
#84 plow (2016) pickup	Roads					10,000					
#25 rear sweeper (1981) tractor	Roads		5,000								
Pontoon Boat (unit #58) 1995	Roads										
Side rear mower (2014)	Roads										
Salt box for truck	Roads	10,000									
Kubota Tractor - Unit # 69 (2012)	Roads								70,000		
Larue Blower - Unit # 77 (2015)	Roads							130,000			
Sidewalk Vehicle - Unit # 93 (2016)	Roads						230,000				
Bush Hog (2005)	Roads				20,000						
Upon review for budget, pooled smaller equipment (chainsaws, fire department tools, etc)	Various		70,000			110,000	12,000	70,000	120,000		120,000
<b>TOTAL COST PER YEAR</b>		<b>173,000</b>	<b>175,200</b>	<b>573,000</b>	<b>210,000</b>	<b>161,000</b>	<b>285,000</b>	<b>292,500</b>	<b>236,000</b>	<b>258,000</b>	<b>162,500</b>

<b>ROADS</b>	
<b>Inventory (as of December 31, 2021)</b>	203.5 km of gravel roads, 163.17 km of hard surface roads
<b>Anticipated Asset Life Cycle</b>	The useful life of road infrastructure is 7-40 years based on the type of surface, conditions, climate, drainage and level of service. Useful life to be provided by the Public Works Director based on these factors.
<b>Integrated</b>	Roads are integrated with other buried assets in the utility corridor such as water, sewer, storm sewers, hydro, telephone, natural gas lines and cable. This may also affect street lighting, sidewalks and traffic signals.
<b>Rehabilitation or Replacement Criteria</b>	<p>The Township's roads are classified by their surface type as either earth roads, gravel, surfaced treated or Low Class Bituminous (LCB) roads or hot mix paved or High Class Bituminous (HCB) roads.</p> <p>The average condition rating is determined by summing the product of length multiplied by the condition rating and then dividing by the total length of the road system. This will result in an average condition rating for the road type.</p> <p>The condition rating for each road type will decrease every year unless maintenance and/or rehabilitation is performed.</p> <p><b>Average condition rating is as follows:</b></p> <p>8-10: Good structural condition but some local improvements may be needed</p> <p>5-7: Average structural condition, but some continued improvement may be needed</p> <p>Less than 5: Poor structural condition. Substantial improvement needed throughout the total road system.</p> <p>As per the 2021 Roads Needs Study, the Township's road system rates 6.3 for good for gravel, and 5.88 or fair for surface treated.</p>
<b>Rehabilitation or Replacement Strategy</b>	As per the Roads Needs Study, three options have been created for road rehabilitation which include the 10 year plan, the maintenance plan and the optimal plan. The 10 year plan is what has been used for the Asset Management Plan with additional work to take place based on funding available. Continued monitoring and evaluation of roads based on condition and ongoing use.
<b>Life Cycle Consequences</b>	Underfunding of road rehabilitation will result in steady degradation resulting in decreased service levels. It also includes escalating repair and maintenance costs.
<b>Integrated Asset Priorities</b>	Road rehabilitation forecasts will be done in conjunction with replacement/rehabilitation of integrated assets.
<b>Corporate/Consulting Source</b>	<p>Township of North Glengarry Roads Needs Study (McIntosh Perry Consulting Engineers Ltd., November 2021)</p> <p>Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan</p> <p>CityWide Asset Management software</p>
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$25,264,350

Roads														
10 Year Asset Management Plan														
Name	From	To	Km	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Actuals Spent in 2021	Sandfield, Skye Road, Gravel, Hard top maintenance			1,315,255										
Other Roads projects in 2022. 2022 budget reflects 10 year plan only					1,074,500									
Bishop Street	Kincardine Street	McDougald Street	0.50		98,000	-	-	-	3,000	-	-	-	6,500	-
Concession 12	Angel Road	0.4km East of Angel Road	0.40		78,000	-	-	-	-	-	-	-	13,200	-
Concession 2	Kenyon Dam Road, easterly	County Road 45	0.50		97,500	-	-	-	-	-	16,500	-	-	-
Concession 8	2.8km E. at Bridge Crossing	Bridge Crossing at Blythe Rd	1.70		331,500	-	-	-	-	-	56,100	-	-	-
Dornie Road	Kenyon , Conc. 4, southerly	1.8km S of Conc 4	1.90		62,700	-	-	-	-	-	-	-	-	-
Dornie Road	1.8km S of Conc 4	Hwy 43	1.80		59,400	-	-	-	-	-	-	-	-	-
Kenyon Dam Road	Concession Rd 2	Concession 1, Kenyon	1.40		46,200	-	-	-	-	-	-	-	-	-
Kenyon, Concession 4	County Road 20, easterly	0.1km W. of Valance Road	1.80		59,400	-	-	-	-	-	-	-	-	-
Sandfield Avenue	Lochiel Street, County Road 10	St. Paul Street	0.50		98,000	-	-	-	3,000	-	-	-	6,500	-
West Boundary Road	Lochiel Street, West	Clement Street	0.20		39,200	-	-	-	1,200	-	-	-	2,600	-
West Boundary Road	Clement Street	County Road 45	1.10		122,100	-	-	-	6,600	-	-	-	14,300	-
Emma Lane	Florence Street, easterly	Dead End	0.30		58,500	-	-	-	-	-	9,900	-	-	-
Aberdeen Road	2.0 km N. of Lochinvar	W. Hawkesbury Boundary	0.20		39,000	-	-	-	-	-	6,600	-	-	-
Tobin Street	County Road 34	0.3 km S. of County Road 34	0.30		169,500	-	-	-	1,800	-	-	-	3,900	-
Anik Street	West Boundary Road	County Road 34	0.30		169,500	-	-	-	1,800	-	-	-	3,900	-
Masterson Road	Loch Garry Road, E. to dead end	Third Street (Private Road)	1.50		49,500	-	-	-	-	-	-	-	-	-
Concession 16	County Road 20, westerly	McLeod Road	1.60		52,800	-	-	-	-	-	-	-	-	-
Old Military Road	2km South of County Road 24	County Road 21	2.50		630,000	-	-	-	-	-	-	-	32,500	-
Joseph Street	Kennedy Avenue, Southerly	County Road 20, old Orchid	0.10		36,500	-	-	-	-	-	-	-	1,300	-
Elgin Street, W.	MacDonald Blvd.	Dead End	0.10		56,500	-	-	-	-	-	-	-	1,300	-
Margaret Street	Elgin Street	St. George Street	0.10		36,500	-	-	-	-	-	-	-	1,300	-
Hugh Munro Street	County Road 20	0.3km E. of County Rd. 20	0.30		169,500	-	-	-	1,800	-	-	-	3,900	-
Kennedy Avenue	Hugh Munro Street	CPR R-O-W	0.40		146,000	-	-	-	-	-	-	-	5,200	-
Glen Sandfield Road	County Road 23	0.1 km easterly	0.10		25,200	-	-	-	-	-	-	-	1,300	-
Nixon Boundary Road	County Road 34	0.3 km W. of County Road 34	0.10		25,200	-	-	-	-	-	-	-	1,300	-
McCormick Road	1 km East of Power Dam Road	County Road 23	7.90		-	1,540,500	-	-	-	-	-	260,700	-	-
Brodie Road	2.3 km W. of County Road 23,W	Lome School Road	2.50		-	630,000	-	-	-	-	-	-	-	32,500
Rigaud Street	County Road 10, southerly	Sauvé Street	0.20		-	73,000	-	-	-	-	-	-	-	2,600
Sauvé Street	Rigaud Street	County Road 23	0.40		-	146,000	-	-	-	-	-	-	-	5,200
Dashney Street	County Road 23	Chisholm Street	0.10		-	36,500	-	-	-	-	-	-	-	1,300
Chisholm Street	County Road 10, northerly	Dead End	0.40		-	146,000	-	-	-	-	-	-	-	5,200
Hope Lane	County Road 10, northerly	Dead End	0.10		-	25,200	-	-	-	-	-	-	-	1,300
Clara Street	County Road 10, northerly	Seguin Mill Street	0.10		-	36,500	-	-	-	-	-	-	-	1,300
Seguin Mill Street	Clara Street	Irvin Street	0.20		-	73,000	-	-	-	-	-	-	-	2,600
Irwin St	County Road 10	Water Treatment Plant	0.10		-	36,500	-	-	-	-	-	-	-	1,300
Annie St	County Road 10	Sequin Mill Street	0.10		-	36,500	-	-	-	-	-	-	-	1,300
Concession I	Highway 34	Lakeshore Road	4.80		-	-	158,400	-	-	-	-	-	-	-
Concession I	Lakeshore Road	Loch Garry Road	5.80		-	-	191,400	-	-	-	-	-	-	-
Front Street, West	County Road 34	West Boundary Road	0.15		-	-	29,400	-	-	-	-	-	900	-
Hope-Ouimet Road	Gore Road, southerly	County Road 10	0.80		-	-	201,600	-	-	-	-	-	-	-
Hope-Ouimet Road, Conc. 3	County Road 21	Gore Road	3.60		-	-	118,800	-	-	-	-	-	-	-
Kenyon Dam Road	County Rd 45	Concession Rd 2	0.50		-	-	51,500	-	-	-	-	-	3,000	-
Lochiel Street	West Boundary Road	Park Avenue	0.20		-	-	73,000	-	-	-	-	-	-	-
Lochiel Street	Park Avenue	County Road 34	0.10		-	-	56,500	-	-	-	-	-	-	-
McCormick Road (Golf Course)	Sandfield	0.2km easterly	0.20		-	-	39,200	-	-	-	1,200	-	-	-
McCormick Road (Golf Course)	0.2km E. of Sandfield	1.0km E. of Sandfield	0.80		-	-	82,400	-	-	-	4,800	-	-	-
McCormick Road (Golf Course)	1.0km E. of Sandfield	1.2km E. of Sandfield	0.20		-	-	50,400	-	-	-	-	-	-	-
Ouellette Road	McCormick Road	Bush Road	2.20		-	-	226,600	-	-	-	13,200	-	-	-
Park Avenue	Dead End, southerly	Derby Street	0.10		-	-	19,500	-	-	-	-	-	-	-
London Street	County Road 10, northerly	Dead End	0.10		-	-	36,500	-	-	-	-	-	-	-
Fox Lane	County Road 10, northerly	Dead End	0.10		-	-	36,500	-	-	-	-	-	-	-
Florence Street	County Road 23, northerly	Dead End	0.40		-	-	146,000	-	-	-	-	-	-	-
Victoria Street, E.	Bishop Street, easterly	Boundary Road, East	0.10		-	-	19,600	-	-	-	-	600	-	-
Maple Street	County Road 34	Bishop Street	0.20		-	-	22,200	-	-	-	-	1,200	-	-
St. George Street, E.	Dead End	Bishop Street	0.40		-	-	78,400	-	-	-	-	2,400	-	-
Center Street	0.2 km East of Bishop Street	Sandfield Avenue	0.10		-	-	19,600	-	-	-	-	600	-	-
Derby Street, E.	County Road 34	Dominion Street	0.10		-	-	56,500	-	-	-	-	-	-	-
Derby Street	Dominion Street, South	Bishop Street	0.10		-	-	56,500	-	-	-	-	-	-	-

Name	From	To	Km	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Sinclair Street	Kenyon Street	Elgin Street	0.10	-	-	-	19,600	-	-	-	-	600	-	-
Sinclair Street	Elgin Street	Kincardine Street	0.20	-	-	-	22,200	-	-	-	-	1,200	-	-
Park Avenue	Derby Street	Lochiel Street	0.30	-	-	-	109,500	-	-	-	-	-	-	-
Lochiel Street	Dead End	West Boundary Road	0.50	-	-	-	182,500	-	-	-	-	-	-	-
Athol Road (Kenyon Conc. 20)	County Road 20	North Stormont Limits	1.60	-	-	-	-	403,200	-	-	-	-	-	-
Front Street	Tobin Street	0.1km east of Tobin St	0.10	-	-	-	-	11,100	-	-	-	-	600	-
Loch Garry Road	Kenyon Concession I, northerly	Concession I East	0.70	-	-	-	-	136,500	-	-	-	-	23,100	-
Loch Garry Road	Concession I East	0.1km W. of Loch Garry Road	1.60	-	-	-	-	312,000	-	-	-	-	52,800	-
Stewart's Glen Concession 21	County Road 20, easterly 1.5 km	Bridge	1.50	-	-	-	-	378,000	-	-	-	-	-	-
Gore Road	Hope-Ouimet Road, easterly	1.1km East of Hope-Ouimet Rd	1.10	-	-	-	-	214,500	-	-	-	-	-	36,300
Concession 5	1.0km W of County Rd 34	2.2km West of County Rd 34	1.20	-	-	-	-	234,000	-	-	-	-	-	39,600
Delorme Crescent	Kenyon Dam Road	Kenyon Dam Road	0.40	-	-	-	-	13,200	-	-	-	-	-	-
Concession 17	County Road 20, westerly	1.0 km W. of County Road 20	1.00	-	-	-	-	33,000	-	-	-	-	-	-
St. George Street, E.	Bishop Street	County Road 34	0.20	-	-	-	-	113,000	-	-	-	-	-	-
Elgin Street, E.	County Road 34	Bishop Street	0.20	-	-	-	-	113,000	-	-	-	-	-	-
MacLeod Crescent	River Road	Boundary Road, East	0.30	-	-	-	-	109,500	-	-	-	-	-	-
William Street	Tobin Street@County Road 34,E	Boundary Road, East	0.40	-	-	-	-	146,000	-	-	-	-	-	-
Dominion Street, South	St. James, southerly	William Street	0.50	-	-	-	-	282,500	-	-	-	-	-	-
Albert Street	County Road 34	Dominion Street, South	0.10	-	-	-	-	56,500	-	-	-	-	-	-
Kenyon Street, E.	Sandfield Avenue	Bishop Street	0.20	-	-	-	-	113,000	-	-	-	-	-	-
Kenyon Street, E.	Bishop Street	County Road 34	0.20	-	-	-	-	113,000	-	-	-	-	-	-
Jean Street	West Boundary Road	Dead End (Cul de Sac)	0.20	-	-	-	-	113,000	-	-	-	-	-	-
Victoria Street, West	West Boundary Road	County Road 34	0.20	-	-	-	-	113,000	-	-	-	-	-	-
Boundary Road, E.	Front Street	St. James Street	0.70	-	-	-	-	-	255,500	-	-	-	-	-
Boundary Road, E.	St. James Street	Victoria Street	0.20	-	-	-	-	-	73,000	-	-	-	-	-
Front Street	0.3 km S. of County Road 34	SW 0.1 km to County Road 34	0.10	-	-	-	-	-	36,500	-	-	-	-	-
Industrial Blvd.	Leroux Street	Touchette Street	0.70	-	-	-	-	-	176,400	-	-	-	-	-
Kincardine Street, W.	County Road 34	MacDonald Blvd.	0.40	-	-	-	-	-	226,000	-	-	-	2,400	-
McCormick Road	MacDonell Road	Power Dam Road	0.50	-	-	-	-	-	97,500	-	-	-	-	-
McCormick Road (Golf Course)	1.2km E. of Sandfield	MacDonell Road	1.50	-	-	-	-	-	154,500	-	-	-	9,000	-
St. Paul Street	County Road 34	Sandfield Avenue	0.40	-	-	-	-	-	226,000	-	-	-	2,400	-
Marcoux Road	Highway 43	Kenyon Dam Road	3.20	-	-	-	-	-	624,000	-	-	-	-	-
Concession 8	Highway 34	3.4 km West	3.10	-	-	-	-	-	781,200	-	-	-	-	-
Leroux Street	MacDonald Blvd.	Industrial Blvd.	0.20	-	-	-	-	-	50,400	-	-	-	-	-
Touchette Street	Industrial Blvd.	MacDonald Blvd.	0.20	-	-	-	-	-	50,400	-	-	-	-	-
Center Street	County Road 34	0.2 km East of Bishop Street	0.30	-	-	-	-	-	-	169,500	-	-	-	1,800
Skye Road	3.3km E. of County Road 30	Easterly 2.20km	2.20	-	-	-	-	-	-	429,000	-	-	-	-
Skye Road	5.5km E. of County Road 30	Easterly 2.5km	2.50	-	-	-	-	-	-	487,500	-	-	-	-
Skye Road	8km E. of Country Road 30	McCrimmon Dr	1.20	-	-	-	-	-	-	234,000	-	-	-	-
Concession 12	0.4km East Angel Road	1.3km East of Angel Road	1.10	-	-	-	-	-	-	36,300	-	-	-	-
Power Dam Road	County Road 34	McCormick Road	2.70	-	-	-	-	-	-	89,100	-	-	-	-
McCormick Road	Power Dam Road	1 km easterly	1.00	-	-	-	-	-	-	33,000	-	-	-	-
Old Military Road	Lochinvar Road	2km South of County Road 24	8.60	-	-	-	-	-	-	2,167,200	-	-	-	-
McCrimmon Drive	County Road 31	Dead End	0.20	-	-	-	-	-	-	50,400	-	-	-	-
Boundary Road, E.	Victoria Street	Lochiel Street, County Road 10	0.20	-	-	-	-	-	-	-	39,200	-	-	-
Breadalbane Road, E.	East Hawkesbury Boundary	Westerly 1.7 km	1.70	-	-	-	-	-	-	-	428,400	-	-	-
Breadalbane Road, E.	1.7 km W. of E. Hawkesbury Rd	County Road 23	1.20	-	-	-	-	-	-	-	123,600	-	-	-
Concession 5	0.3km W of County Rd 30	MacDermid Rd	2.10	-	-	-	-	-	-	-	409,500	-	-	-
Dominion Street	0.1km South Maple Street	Kincardine Street	0.10	-	-	-	-	-	-	-	11,100	-	-	-
Kincardine Street	Dominion Street	Main Street, County Road 34	0.10	-	-	-	-	-	-	-	56,500	-	-	-
Kincardine Street, E.	Bishop Street	Dominion Street	0.10	-	-	-	-	-	-	-	56,500	-	-	-
Power Dam Road	County Road 34, westerly	Dead End	0.30	-	-	-	-	-	-	-	30,900	-	-	-
Viau Street	Boundary Road, East	Dead End (school bus depot)	0.10	-	-	-	-	-	-	-	36,500	-	-	-
Concession 8	County Road 20	2.8km E. at Bridge Crossing	2.80	-	-	-	-	-	-	-	546,000	-	-	-
Bishop Street	County Road, Lochiel Street, N.	Peel Street, E.	0.10	-	-	-	-	-	-	-	19,600	-	-	-
MacDonald Blvd.	MacDougald Street, W.	Dead End	0.30	-	-	-	-	-	-	-	109,500	-	-	-
Dominion Street	Maple Street	0.1km south of Maple Street	0.10	-	-	-	-	-	-	-	36,500	-	-	-
Sandfield Avenue	St. Paul Street	Dead End	0.20	-	-	-	-	-	-	-	22,200	-	-	-
Peel Street	Bishop Street	Sandfield Avenue	0.20	-	-	-	-	-	-	-	113,000	-	-	-
Peel Street	Bishop Street	County Road 34	0.20	-	-	-	-	-	-	-	113,000	-	-	-
Derby Street, W.	County Road 34	Park Avenue	0.10	-	-	-	-	-	-	-	19,600	-	-	-
Peel Street	Park Avenue	County Road 34	0.10	-	-	-	-	-	-	-	56,500	-	-	-
Concession 4, Kenyon	Dornie Rd	0.10km W. of Auld McMillian Road	2.50	-	-	-	-	-	-	-	-	487,500	-	-
Concession 4, Kenyon	0.10km W. of Auld McMillian Road	Hwy 34	2.40	-	-	-	-	-	-	-	-	247,200	-	-

Name	From	To	Km	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Concession 5	Highway No. 34, westerly	1.0 km W. of County Road 34	0.90		-	-	-	-	-	-	-	175,500	-	-
Lorne School Road	Brodie Road, West	County Road 21	1.00		-	-	-	-	-	-	-	252,000	-	-
Concession 4, Kenyon	County Road 30, easterly	Dornie Road	4.90		-	-	-	-	-	-	-	955,500	-	-
Dornie Road	1.8km S of Conc 4	Hwy 43	1.80		-	-	-	-	-	-	-	351,000	-	-
Hope Street	Ronald Street	Kincardine Street	0.30		-	-	-	-	-	-	-	169,500	-	-
Hope Street	Kincardine Street	Ronald Street	0.20		-	-	-	-	-	-	-	113,000	-	-
Concession II	0.3km E. of County Road 20	1.8km E. of County Rd. 20	1.00		-	-	-	-	-	-	-	-	195,000	-
Concession 5	County Road 30, westerly	0.3 km W. of County Road 30	0.30		-	-	-	-	-	-	-	-	75,600	-
Dominion Street	Keyon Street E.	Center Street	0.10		-	-	-	-	-	-	-	-	56,500	-
Dominion Street	Center Street	St. Paul Street	0.10		-	-	-	-	-	-	-	-	56,500	-
Dominion Street	St. Paul Street	Lochiel Street, County Road 10	0.50		-	-	-	-	-	-	-	-	282,500	-
Loch Garry Road	Concession II, northerly	1.8km N. of Concession II	1.80		-	-	-	-	-	-	-	-	351,000	-
Loch Garry Road	1.8km N. of Concession II	Highway No. 43	1.10		-	-	-	-	-	-	-	-	214,500	-
Eigg Road	County Road 34	1.5 km easterly of County Rd.34	1.40		-	-	-	-	-	-	-	-	352,800	-
Gernish Street, E.	Bishop Street	Dominion Street	0.10		-	-	-	-	-	-	-	-	56,500	-
Gernish Street, E.	Dominion Street	County Road 34	0.10		-	-	-	-	-	-	-	-	56,500	-
Tonia Street	West Boundary Road	Dead End at cul de sac	0.20		-	-	-	-	-	-	-	-	113,000	-
Jacques Street	County Road 34	Massie Crescent	0.20		-	-	-	-	-	-	-	-	73,000	-
Massie Crescent	West Boundary Road	West Boundary Road	0.40		-	-	-	-	-	-	-	-	146,000	-
Hugh Munro Street	1.3km East of Angel Road, E.	Old Orchard (County Road 20)	0.20		-	-	-	-	-	-	-	-	73,000	-
Lochinvar Road (paved)	0.1km E of Tannery Road	County Road 34	2.30		-	-	-	-	-	-	-	-	-	579,600
MacMillan Road	Bush Road	County Road 21	2.21		-	-	-	-	-	-	-	-	-	430,950
Tannery Road	County Road 34	200m SE of Co Rd 34 (Herbs')	0.10		-	-	-	-	-	-	-	-	-	25,200
Tannery Road	200m SE of Co Rd 34 (Herbs')	Lochinvar Road	1.80		-	-	-	-	-	-	-	-	-	453,600
McDougald Street	Bishop Street	County Road 34	0.20		-	-	-	-	-	-	-	-	-	113,000
Dornie Road	Kenyon, Conc. 4, southerly	1.8km S of Conc 4	1.90		-	-	-	-	-	-	-	-	-	370,500
Service Road	Tannery Road, easterly	Entrance to Service Centre	0.30		-	-	-	-	-	-	-	-	-	75,600
		<b>TOTAL COST BY YEAR</b>	<b>136.96</b>	<b>1,315,255</b>	<b>1,074,500</b>	<b>2,779,700</b>	<b>2,104,300</b>	<b>3,008,000</b>	<b>2,770,600</b>	<b>3,696,000</b>	<b>2,336,400</b>	<b>3,018,500</b>	<b>2,295,600</b>	<b>2,180,750</b>
					*Approved Budget									



<b>WATER</b>	
<b>Inventory (as of December 31, 2021)</b>	The Township has 64 kilometers of waterways which has increased since the last Asset Management Plan with the expansion of waterworks to Maxville.
<b>Anticipated Asset Life Cycle</b>	Water assets are categorized as environmental assets with useful life ranging between 40 to 100 years depending on the asset. Water mains and valves are estimated at 100 years, water towers at 100 years and hydrants at 50 years of useful life.
<b>Integrated</b>	Water systems may be integrated with road resurfacing or widening, bridges or culverts.
<b>Rehabilitation or Replacement Criteria</b>	Condition assessments are completed on an annual basis. This assessments helps identify optimum rehabilitation or replacement year. Complete examination of the water system is completed approximately every 5 years.
<b>Rehabilitation or Replacement Strategy</b>	Environmental infrastructure is reviewed annually and replacement, rehabilitation, and expansion activities are scheduled as required in the 10 year plan.
<b>Life Cycle Consequences</b>	If water lifecycle is not adhered to, this could lead to reduced levels of service and safe drinking water would be compromised.
<b>Integrated Asset Priorities</b>	Water work should be done in conjunction with roads, bridges and culvert plans. The integration can be internally and externally. In general, road rehabilitation drives the replacement of underground water infrastructure if the asset is near the end of its useful lifecycle.
<b>Corporate/Consulting Source</b>	Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan CityWide Asset Management software
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$4,014,413



<b>Water</b>											
<b>10 Year Asset Management Plan</b>											
<b>Description</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
Meter Stations (Flow meter)		25,000		100,000		100,000					
Lochiel St. Water Main	155,000	155,000									
Replace Water main Tobin St		150,000									
Valve and hydrant replacement	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	
Hydraulic modeling		43,000									
Water meter replaement program	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	
Atuo Flushers (x2)	5,000										
Meter Software Upgrade	15,000										
Glen Robertson Meter head replacement	7,000										
Leak detection system			65,000								
Electronic Logbook Software		9,000									
Glen Robertson SCADA upgrade	46,000	65,000									
UV Units	5,500	7,500									
Wall Mounted CL2 analyzer	7,000	7,000									
Clean Glen Robertson well casing	10,000	10,000									
Future spending (average of last 5 years plus 2% per year). Budget comes as required based on testing of the system.			253,950	226,168	333,531	241,041	348,702	356,515	364,485	372,615	420,906
<b>TOTAL COST BY YEAR</b>	<b>290,500</b>	<b>511,500</b>	<b>358,950</b>	<b>366,168</b>	<b>373,531</b>	<b>381,041</b>	<b>388,702</b>	<b>396,515</b>	<b>404,485</b>	<b>412,615</b>	<b>420,906</b>

<b>WASTEWATER</b>	
<b>Inventory (as of December 31, 2021)</b>	The Township has 38 kilometers of wastewater infrastructure.
<b>Anticipated Asset Life Cycle</b>	Wastewater assets are categorized as environmental assets with useful life ranging between 40 to 100 years depending on the asset
<b>Integrated</b>	Wastewater systems may be integrated with road resurfacing or widening, bridges or culverts.
<b>Rehabilitation or Replacement Criteria</b>	Condition assessments are completed on an annual basis. This assessments helps identify optimum rehabilitation or replacement year. Complete examination of the wastewater system is completed approximately every 5 years. A major expansion of the sewage lagoons is planned within the next 5 years.
<b>Rehabilitation or Replacement Strategy</b>	Environmental infrastructure is reviewed annually and replacement, rehabilitation, and expansion activities are scheduled as required in the 10 year plan.
<b>Life Cycle Consequences</b>	If wastewater asset lifecycles are not adhered to, this could lead to reduced levels of service and may pose a health issue.
<b>Integrated Asset Priorities</b>	Wastewater work should be done in conjunction with roads, bridges and culvert plans. The integration can be internally and externally. In general, road rehabilitation drives the replacement of underground water infrastructure if the asset is near the end of its useful lifecycle.
<b>Corporate/Consulting Source</b>	Township of North Glengarry Financial Statements (December 31, 2020) and 10 year capital plan CityWide Asset Management software
<b>Estimated Cost Strategy</b>	Total Estimated 10 year cost: \$21,984,972



<b>Wastewater</b>											
<b>10 Year Asset Management Plan</b>											
<b>Description</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
Sewer flushing and cctv	50,000		25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
sewer relining	60,000		135,000	60,000		50,000	50,000			50,000	50,000
Pumping needs study		34,000									
Collection flow testing		34,000									
Wastewater hydraulic model (Alexandria and Maxville)	2,000	73,558									
SCADA for Bishop station		65,000									
SCADA for Maxville Main Station			65,000								
SCADA for Sandfield Station				65,000							
SCADA for Leroux Station					65,000						
SCADA for Manor Station	28,000					65,000					
Bishop Street Pumping Station Piping	9,000		65,000								
Pump upgrade Maxville main station			25,000								
Maxville Main station grating replacement	35,000										
Sewage pumps x 2 (from 2019)	165,000	17,000									
Maxville Manor pump and controller upgrade	5,000	25,000									
Geotube removal		35,000									
Sludge removal Cell B Phase 2 Alexandria lagoon		110,000									
Sludge removal Maxville Lagoo (technology to be determined)			100,000								
Lagoon upgrades			4,675,000	4,675,000	4,675,000	4,675,000					
Estimated annual future capital plus 2%							350,000	357,000	364,140	371,423	378,851
<b>TOTAL COST BY YEAR</b>	<b>354,000</b>	<b>393,558</b>	<b>5,090,000</b>	<b>4,825,000</b>	<b>4,765,000</b>	<b>4,815,000</b>	<b>425,000</b>	<b>382,000</b>	<b>389,140</b>	<b>446,423</b>	<b>453,851</b>